CLAIMS

1.   An inhibitor of c-Jun phosphorylation caused by c-Jun N-terminal kinase 3, having

at least one function selected from the group consisting of the following functions:

i) inhibiting the binding of p21-activated kinase 4 (PAK4) to MAP kinase kinase 7 (MKK7);

ii) inhibiting the phosphorylation of MKK7 caused by PAK4;

iii) inhibiting the binding of JNK/SAPK-inhibitory kinase (JIK) to MAP kinase kinase 7

(MKK7); and

iv) inhibiting the phosphorylation of MKK7 caused by JIK.

2.   A method for inhibiting c-Jun phosphorylation caused by c-Jun N-terminal kinase 3,

comprising at least one step selected from the group consisting of the following steps:

i) inhibiting the binding of p21-activated kinase 4 (PAK4) to MAP kinase kinase 7 (MKK7);

ii) inhibiting the phosphorylation of MKK7 caused by PAK4;

iii) inhibiting the binding of JNK/SAPK-inhibitory kinase (JIK) to MAP kinase kinase 7

(MKK7); and

iv) inhibiting the phosphorylation of MKK7 caused by JIK.

3.   An agent for preventing and/or treating a disorder attributable to c-Jun

phosphorylation caused by c-Jun N-terminal kinase 3, having at least one function selected

from the group consisting of the following functions:

i) inhibiting the binding of p21-activated kinase 4 (PAK4) to MAP kinase kinase 7 (MKK7);

ii) inhibiting the phosphorylation of MKK7 caused by PAK4;

iii) inhibiting the binding of JNK/SAPK-inhibitory kinase (JIK) to MAP kinase kinase 7

(MKK7); and

iv) inhibiting the phosphorylation of MKK7 caused by JIK.

4.   An agent for preventing and/or treating a neurodegenerative disorder, having at least

one function selected from the group consisting of the following functions:

i) inhibiting the binding of p21-activated kinase 4 (PAK4) to MAP kinase kinase 7 (MKK7);

ii) inhibiting the phosphorylation of MKK7 caused by PAK4;

iii) inhibiting the binding of JNK/SAPK-inhibitory kinase (JIK) to MAP kinase kinase 7 (MKK7); and

iv) inhibiting the phosphorylation of MKK7 caused by JIK.

5.   A method for preventing and/or treating a disorder attributable to c-Jun phosphorylation caused by c-Jun N-terminal kinase 3, comprising at least one step selected from the group consisting of the following steps:

i) inhibiting the binding of p21-activated kinase 4 (PAK4) to MAP kinase kinase 7 (MKK7);

ii) inhibiting the phosphorylation of MKK7 caused by PAK4;

iii) inhibiting the binding of JNK/SAPK-inhibitory kinase (JIK) to MAP kinase kinase 7 (MKK7); and

iv) inhibiting the phosphorylation of MKK7 caused by JIK.

6.   A method for preventing and/or treating a neurodegenerative disorder, comprising at least one step selected from the group consisting of the following steps:

i) inhibiting the binding of p21-activated kinase 4 (PAK4) to MAP kinase kinase 7 (MKK7);

ii) inhibiting the phosphorylation of MKK7 caused by PAK4;

iii) inhibiting the binding of JNK/SAPK-inhibitory kinase (JIK) to MAP kinase kinase 7 (MKK7); and

iv) inhibiting the phosphorylation of MKK7 caused by JIK.

7.   A method for identifying a compound that inhibits the binding of p21-activated kinase 4 (PAK4) to MAP kinase kinase 7 (MKK7), comprising contacting PAK4 and/or MKK7 with a test compound under conditions that allow the binding of PAK4 to MKK7; and determining whether the test compound inhibits the binding of PAK4 to MKK7, by detecting the presence, absence or change of a signal generated by the binding of PAK4 to MKK7.

8.　　A method for identifying a compound that inhibits the binding of JNK/SAPK-inhibitory kinase (JIK) to MAP kinase kinase 7 (MKK7), comprising contacting JIK and/or MKK7 with a test compound under conditions that allow the binding of JIK to MKK7; and determining whether the test compound inhibits the binding of JIK to MKK7, by detecting the presence, absence or change of a signal generated by the binding of JIK to MKK7.

9.　　A method for identifying a compound that inhibits the phosphorylation of MAP kinase kinase 7 (MKK7) caused by p21-activated kinase 4 (PAK4), comprising contacting PAK4 and/or MKK7 with a test compound; and determining whether the test compound inhibits the phosphorylation of MKK7 caused by PAK4, by introducing a system using a signal and/or a marker capable of detecting the phosphorylation of MKK7 and detecting the presence, absence or change of the signal and/or the marker.

10.　　A method for identifying a compound that inhibits the phosphorylation of MAP kinase kinase 7 (MKK7) caused by JNK/SAPK-inhibitory kinase (JIK), comprising contacting JIK and/or MKK7 with a test compound; and determining whether the test compound inhibits the phosphorylation of MKK7 caused by JIK, by introducing a system using a signal and/or a marker capable of detecting the phosphorylation of MKK7 and detecting the presence, absence or change of the signal and/or the marker.

11.　　A compound obtained by the method according to any one of claims 7 to 10.

12.　　A compound that inhibits the binding of p21-activated kinase 4 (PAK4) to MAP kinase kinase 7 (MKK7).

13.　　A compound that inhibits the binding of JNK/SAPK-inhibitory kinase (JIK) to MAP kinase kinase 7 (MKK7).

14.   A compound that inhibits the phosphorylation of MAP kinase kinase 7 (MKK7) caused by p21-activated kinase 4 (PAK4).

15.   A compound that inhibits the phosphorylation of MAP kinase kinase 7 (MKK7) caused by JNK/SAPK-inhibitory kinase (JIK).

16.   An inhibitor of the binding of p21-activated kinase 4 (PAK4) to MAP kinase kinase 7 (MKK7).

17.   An inhibitor of the binding of JNK/SAPK-inhibitory kinase (JIK) to MAP kinase kinase 7 (MKK7).

18.   An inhibitor of the phosphorylation of MAP kinase kinase 7 (MKK7) caused by p21-activated kinase 4 (PAK4).

19.   An inhibitor of the phosphorylation of MAP kinase kinase 7 (MKK7) caused by JNK/SAPK-inhibitory kinase (JIK).

20.   A pharmaceutical composition containing an effective amount of at least one member selected from the group consisting of the compounds according to claims 11 to 15 and the inhibitors according to claims 16 to 19.

21.   An agent for preventing and/or treating a disorder attributable to c-Jun phosphorylation caused by c-Jun N-terminal kinase 3, containing an effective amount of at least one member selected from the group consisting of the compounds according to claims 11 to 15 and the inhibitors according to claims 16 to 19.

22.   An agent for preventing and/or treating a neurodegenerative disorder, containing an

effective amount of at least one member selected from the group consisting of the compounds according to claims 11 to 15 and the inhibitors according to claims 16 to 19.

23.   The agent for preventing and/or treating a neurodegenerative disorder according to claim 5 or 22, wherein the neurodegenerative disorder is a polyglutamine disease, Huntington's disease, spino-cerebellar ataxia, bulbo-spinal muscular atrophy, dentatorubral-pallidoluysian atrophy, Alzheimer's disease, Down syndrome, Parkinson's disease, dementia with Lewy bodies, multisystem atrophy, familial amyotrophic lateral sclerosis, progressive supranuclear palsy, corticobasal degeneration, Pick's disease, familial British dementia, Creutzfeldt-Jakob disease, Gerstmann-Stranssler syndrome, mad cow disease (bovine spongiform encephalopathy) (BSE), or familial dementia associated with neuroserpin inclusion bodies.

24.   A method for preventing and/or treating a disorder attributable to c-Jun phosphorylation caused by c-Jun N-terminal kinase 3, comprising using at least one member selected from the group consisting of the compound according to claims 11 to 15 and the inhibitor according to claims 16 to 19.

25.   A method for preventing and/or treating a neurodegenerative disorder, comprising using at least one member selected from the group consisting of the compound according to claims 11 to 15 and the inhibitor according to claims 16 to 19.

26.   The method for preventing and/or treating a neurodegenerative disorder according to claim 6 or 25, wherein the neurodegenerative disorder is a polyglutamine disease, Huntington's disease, spino-cerebellar ataxia, bulbo-spinal muscular atrophy, dentatorubral-pallidoluysian atrophy, Alzheimer's disease, Down syndrome, Parkinson's disease, dementia with Lewy bodies, multisystem atrophy, familial amyotrophic lateral sclerosis, progressive supranuclear palsy, corticobasal degeneration, Pick's disease, familial British dementia, Creutzfeldt-Jakob disease, Gerstmann-Stranssler syndrome, mad cow

disease (bovine spongiform encephalopathy) (BSE), or familial dementia associated with neuroserpin inclusion bodies.

27.   A reagent kit containing at least one member selected from the group consisting of p21-activated kinase 4 (PAK4), JNK/SAPK-inhibitory kinase (JIK), a polynucleotide encoding PAK4, a polynucleotide encoding JIK, a vector containing a polynucleotide encoding PAK4 and a vector containing a polynucleotide encoding JIK; and at least one member selected from the group consisting of MAP kinase kinase 7 (MKK7), a polynucleotide encoding MKK7 and a vector containing a polynucleotide encoding MKK7.

28.   A reagent kit that is used in the identification method according to any one of claims 7 to 10, containing at least one member selected from the group consisting of p21-activated kinase 4 (PAK4), JNK/SAPK-inhibitory kinase (JIK), a polynucleotide encoding PAK4, a polynucleotide encoding JIK, a vector containing a polynucleotide encoding PAK4 and a vector containing a polynucleotide encoding JIK; and at least one member selected from the group consisting of MAP kinase kinase 7 (MKK7), a polynucleotide encoding MKK7 and a vector containing a polynucleotide encoding MKK7.